

BY-PRODUCT MANAGEMENT IN SEED PROCESSING AND TREATMENT PLANTS

By Prof. M.W. Okoth

Department of Food Science, Nutrition
and Technology

SEMIS UON
Seed Enterprises Management Institute
University of Nairobi

Introduction

- In a seed processing and treatment plant, the primary product is dry treated seed of the highest possible quality.
- This quality is largely determined at the farm.
- However, even within one farm there will always be defective plants that cannot produce seed of the desired quality.
- These inferior or defective seeds are often mixed with the good seed at harvest and have to be sorted out in the factory.
- They are a byproduct since they can be used for other purposes.

- It also happens that in the process of manufacturing good seed other components are separated from it.
- Some of these separated components can find use either in the same plant or elsewhere and thus form part of the byproducts from the factory.
- In this presentation we concentrate on the management of byproducts of maize seed processing.

2. By Products of Maize Seed Processing

- **2.1. Sorted out off-spec maize**
- This is maize that is not suitable for use as seed but is otherwise in good condition.
- It is separated from the rest of the raw material during sorting on the conveyor belt before drying of the unshelled maize.
- It should be dried separately, shelled, cleared and sold as a by-product to be used for food or feed or any other purpose.

2.2 Surplus Maize Cobs

- These are maize cobs over and above what is required as fuel for heating the drying air. It can be managed in a number of ways.
- It can be sold as it is without any processing for use as fuel or for conversion to other products.
- It can be used generate electricity that is used to provide power and lighting in the factory and the surplus sold.
- In this way there will be saving in the electricity bill as well generation of extra income.
- It can be converted to higher value products by treatments such as pyrolysis, gasification and composting

2.3 Shelling and aspiration DVST

- This can be collected by passing the exhaust air through a cyclone
- Can be sold for use as an ingredient in animal feed manufacture.

3. Byproducts of other seeds

- Sunflower screenings:
 - Light and blank sunflower seeds, chaf, etc.
 - Used as livestock feed. High in oil and is an excellent fibre source.
- **Bean culls:**
 - Split and damaged beans.
 - Approximately 20% protein.
 - Used as livestock feed.
- **Sunflower Seeds:**
 - Seeds that are too small for seed planting purposes:
 - Recleaned and used as bird seed for birds such as parrots.
- **Others:**
 - Cotton Seed hulls
 - Cotton seed screenings
 - Barley screenings
 - Sunflower hulls
 - Peanut hulls

4. Concluding remarks

- Seed manufacture inevitably leads to production components other than the desired seed.
- Some of these components can be used directly, others can be used after further processing or conversion to other products.
- Efficient utilization of byproducts can go along way towards improving the profitability of seed processing and treatment plants.

SEMIIS UoN
THANK YOU

Seed Enterprises Management Institute
University of Nairobi